

WE CLAIM:

1. An integrated phone-based home gateway system providing in-home and to-home networking, comprising in combination:

5 a home gateway interface for initializing broadband communications service configurations and provisions, initializing data communications parameters and for providing routing or bridging for networking communications;

a communications interface for connecting to one or more networks, for providing data communications, for providing broadband communications and for providing narrow-band communications including voice communications;

10 a processor for processing information from the one or more networks;

a display interface for displaying the information from the one or more networks;

and

a wireless communications interface for connecting to external wireless devices.

15 2. The integrated phone-based home gateway system of Claim 1, further comprising a portable multi-function handset.

3. The integrated phone-based home gateway system of Claim 1, wherein the portable multi-function handset performs the function of at least one of a cordless phone,
20 a mobile phone, a web phone, or a walkie-talkie radio.

4. The integrated phone-based home gateway system of Claim 1, wherein the communication interface includes a speaker-phone.

5. The integrated phone-based home gateway system of Claim 1, wherein the communication interface includes a digital subscriber line ("DSL") device and an analog modem.

6. The integrated phone-based home gateway system of Claim 5, wherein the DSL device includes an asymmetric digital subscriber line ("ADSL") device, symmetric DSL ("SDSL") device, high-bit-rate DSL ("HDSL") device or very-high-bit-rate ("VDSL") device.

7. The integrated phone-based home gateway system of Claim 1, wherein the communication interface includes voice communications using Plain Old Telephone Service ("POTS") or Voice over Internet Protocol ("VoIP") channels.

8. The integrated phone-based home gateway system of Claim 1, further comprising:

at least one module for interfacing with an external device.

9. The integrated phone-based home gateway system of Claim 8, wherein the external device includes a desk-top computer, lap-top computer, notebook computer, a

home security device, a mobile phone, a personal digital assistant, a Internet Protocol-based home appliance, a printer, a facsimile machine, a video camera, or a scanner.

10. The integrated phone-based home gateway system of Claim 8, wherein the at
5 least one module for interfacing with an external device includes an RJ-11 module, a peripheral component interconnect ("PCI") module, a Universal Serial Bus ("USB") module, a home phonline network adapter ("HPNA") module, a Personal Computer Memory Card International Association ("PCMCIA") interface module, a Bluetooth module, an infra data association ("IrDA") module, or a wireless interface module.

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11. The integrated phone-based home gateway system of Claim 1, further comprising one or more modular plug-and-play interfaces.

12. The integrated phone-based home gateway system of Claim 1, wherein the
15 display interface comprises a removable display unit.

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13. The integrated phone-based home gateway system of Claim 12, wherein the removable display unit interfaces with the home gateway interface through a wireless infrared or a wireless radio frequency communications interface.

14. The integrated phone-based home gateway system of Claim 1, wherein the display interface displays and accesses voice, video and data messages.

15. The integrated phone-based home gateway system of Claim 14 wherein the data messages include Internet Protocol messages or e-mail messages.

5 16. The integrated phone-based home gateway system of Claim 1 wherein the display interface displays a graphical representation of a keypad.

17. The integrated phone-based home gateway system of Claim 1, wherein the display interface displays at least one line of real-time stock quote, weather, headline
10 news, community news, or a electronic address information from the Internet.

18. The integrated phone-based home gateway system of Claim 1, further comprising a keypad.

15 19. The integrated phone-based home gateway system of Claim 18 wherein the keypad is a graphical representation of a key pad on the display, a numeric key pad, an alpha-numeric key pad or a keyboard.

20 20. The integrated phone-based home gateway system of Claim 1, further comprising a video camera.

21. The integrated phone-based home gateway system of Claim 1 wherein the one or more networks include a public switched telephone network, a regional broadband network, or the Internet.

5 22. The integrated phone-based home gateway system of Claim 1 wherein the wireless communication interface includes an infrared or radio frequency wireless communication interface.

10 23. The integrated phone-based home gateway system of Claim 1 wherein the wireless communication interface includes a Bluetooth protocol based interface a Shared Wireless Access Protocol based interface or a Wireless Application Protocol based interface.

15 24. The integrated phone-based home gateway system of Claim 1 wherein the wireless communication interface includes a short-range wireless communication interface for connecting to external wireless network devices on a wireless piconet.

20 25. The integrated phone-based home gateway system of Claim 1 wherein the wireless communication interface includes a long-range wireless communication interface for connecting to external wireless network devices on a wireless wide area network.

26. The integrated phone-based home gateway system of Claim 22 wherein the wireless communication interface includes a long-range and a short-range radio frequency wireless communication interface.

5 27. The integrated phone-based home gateway system of Claim 1, further comprising a computer readable medium having stored therein a plurality of computer software modules with a plurality of instructions executable by the processor, including:

 a session manager module for controlling an information session from the one or more networks, controlling a service manager module, controlling an interface manager
10 module, controlling a display manager module and for automatically populating routing and bridging tables and providing routing or bridging for networking communications;

 a service manager module for controlling the communications interface and the wireless communication interface, and initializing broadband communications service configurations and provisions and initializing data communications parameters;

15 an interface manager module for controlling interface modules to external devices; and

 a display manager module for controlling the display interface and the display of information from the one or more networks.

20 28. An integrated phone-based home gateway system providing in-home and to-home networking, comprising in combination:

a home gateway interface for initializing broadband communications service configurations and provisions and for providing routing or bridging for networking communications;

a communications interface for connecting to one or more networks, wherein the
5 communications interface includes a digital subscriber line ("DSL") device and an analog modem;

a processor for processing information from the one or more networks;

a removable display unit for displaying the information from the one or more networks for accessing and displaying voice, video or data messages;

10 a key pad for entering alpha-numeric data;

a home phone line network adapter ("HPNA") module;

a Bluetooth module for interfacing with wireless devices using the Bluetooth wireless protocol;

a portable multi-function wireless handset for performing cordless phone, a
15 mobile phone, a web phone, or walkie-talkie radio functions;

one or more short-range or long-range wireless interfaces for interfacing with external wireless devices;

one or more RJ-11 interface jacks;

at least one modular plug-and-play interface for interfacing with other external
20 devices; and

an optional video camera for sending and receiving video data to and from the one or more networks.

29. The integrated phone-based home gateway system of Claim 28, further comprising a computer readable medium having stored therein a plurality of computer software modules with a plurality of instructions executable by the processor, including:

5 a session manager module for controlling an information session from the one or more networks, controlling a service manager module, controlling an interface manager module, controlling a display manager module and for automatically populating routing and bridging tables and providing routing or bridging for networking communications;

10 a service manager module for controlling the communications interface and the wireless communication interface, and initializing broadband communications service configurations and provisions and initializing data communications parameters;

an interface manager module for controlling interface modules to external devices; and

15 a display manager module for controlling the display interface and the display of information from the one or more networks.

30. In integrated phone-based home gateway system conversion system for connecting to existing phone systems, providing in-home and to-home networking, comprising in combination:

a home gateway interface for initializing broadband communications service
5 configurations and provisions and for providing routing or bridging for networking communications;

a communications interface for connecting to one or more networks, for providing data communications, for providing broadband communications and for providing narrow band communications including voice communications;

10 a processor for processing information from the one or more networks;

a wireless communications interface for connecting to external wireless devices;

a home phone line network adapter ("HPNA") module; and

one or more RJ-11 interface jacks.

15 31. The integrated phone-based home gateway system conversion system of Claim 30, further comprising a computer readable medium having stored therein a plurality of computer software modules with a plurality of instructions executable by the processor, including:

a session manager module for controlling an information session from the one or
20 more networks, controlling a service manager module, controlling an interface manager module, controlling a display manager module and for automatically populating routing and bridging tables and providing routing or bridging for networking communications;

a service manager module for controlling the communications interface and the wireless communication interface, and initializing broadband communications service configurations and provisions and initializing data communications parameters;

an interface manager module for controlling interface modules to external
5 devices; and

a display manager module for controlling the display interface and the display of information from the one or more networks.

32. A method for initializing an integrated phone-based home gateway system,
10 comprising:

establishing one or more narrow-band communications channels with a public switched telephone network from the integrated phone-based home gateway system;

establishing one or more broadband communications channels with a public switched telephone network from the integrated phone-based home gateway system;

15 initializing a data communications interface for a data network from the integrated phone-based home gateway system;

initializing routing or bridging tables on integrated phone-based home gateway system; and

initializing broadband communications service configurations and provisions
20 from the integrated phone-based home gateway system.

33. The method of Claim 32 further comprising computer readable medium having stored therein instructions for causing a processor to execute the steps of the method.

5 34. The method of Claim 32 wherein the step of establishing one or more narrow-band communications channel includes establishing a plain old telephone service ("POTS") channel or a Voice-over-Internet Protocol ("VoIP") channel.

10 35. The method of Claim 32 wherein the step of establishing one or more broadband communications channels includes establishing an asymmetric digital subscriber line ("ADSL"), symmetric DSL ("SDSL"), high-bit-rate DSL ("HDSL"), very-high-bit-rate DSL ("VDSL") or an asynchronous transport mode ("ATM") channel.

15 36. The method of Claim 32 wherein the step of initializing a data communications interface for a data network from the home gateway interface includes initializing an Internet Protocol ("IP") interface.

20 37. The method of Claim 32 wherein the step of initializing broadband communications service configurations and provisions via the home gateway interface includes initializing asymmetric digital subscriber line ("ADSL"), symmetric DSL ("SDSL"), high-bit-rate DSL ("HDSL") very-high-bit-rate DSL ("VDSL") or asynchronous transport mode ("ATM") service configurations and provisions.